Privileged and Confidential

Adding Tia for advice

Response to Epic

Context
- Epic CEO Tim Sweeney has informed us that they plan to distribute Fortnite **via APK download from Fortnite.com rather than Google Play store.** (His email is <u>here</u>).
- We are working on a response to illustrate the value of working with Play.

Next Steps with Epic
- <u>What we say</u>
- <u>What we do</u> including internal comms

Advantages of working with Play Store

REACH
Data provided below should not be shared externally

Android reach through Play Store: **~37% of revenue and 10% of installed base (~193M devices).**
- <u>Here's</u> a quick assessment by Paul G and team of the reach and revenue coverage of the devices that Epic is targeting for Fortnite.
- Caveats: Reach could be significantly lower. Based on initial assessment of frame pacing, Idries@ believes that the game experience will be consistent only on devices with Adreno chips. And timmurray@ believes that the game will not work on S7. Note that on the S8 (Mali version), Epic plans to cap the frame rate at 20fps, which is a poor UX for a phone that is 1.25 years old.

Android reach without Play Store - **significantly lower. ~20% of viable devices have unknown sources turned on.**
- Reach of apps that are not distributed through the Play Store: For example: % of MCS devices that have Amazon App Store by country.
  - From Ventakesh: Top apps installed off-Play Store are mostly OEM/carrier managed apps. Top markets are US, JP. GB and mostly prevalent on Android J, K and L. (<u>Trix with Data</u>)
  - **That said -Supercell told us that 5M+ people sideloaded Clash Royale when it soft launched on iOS. The apk spread globally very quickly.**
- % of devices that have unknown sources turned off by country.
  - From Ed Cunningham: **~32% worldwide with unknown sources enabled.** Note that we only have this data (unknown sources ON vs. OFF) for pre-O devices - our collection

Comment [1]: Do we know if new users turned on unknown sources for the sake of installing Clash Royale or if they already had this turned on?

My biggest worry is that a big chunk of Android users who may not have turned on Unknown sources, may now be tempted to do so because of Epic - and put themselves at a security risk as a result.

Comment [2]: Is there some correlation between being a "premium" devices and turning on unknown sources?

If not, then should we multiply all the numbers below by 10%, since Epic already targets only a subset of devices? i.e. their reach will be significantly lower unless new users turn on Unknown Sources for playing Fortnite.

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hasn't adapted to the new per-source model from O+. So be sure to discount any data from O+ devices in the queries, otherwise the results will be skewed (they all report as if the legacy unknown sources is on). Because the global % of O+ devices is relatively small, the results should still be fairly reflective of reality.

- ○ Here's the <u>data</u> by country. (Thanks Ed, Din Lee). The data is incomplete due to Safety Net check on devices is incomplete.
- ○ For Fortnite top revenue markets, the % of devices with unknown sources enabled is as follows:
  - US: 15%
  - UK: 17%
  - AU: 14%
  - CA: 15%
- ○ Beyond their top markets, here the data for top Play revenue markets.
  - JP: 20%
  - KR: 13%

USER EXPERIENCE

Summary of user experience from sideloaded apps

User experience and associated risks - Tian suggested we work with **Paul B and Dave K** on this.
- ● AMZN website through which they are distributing the AMZN App Store. How difficult is it to get users to understand what to do?
- ● Users needing to understand unknown sources. The risk is that it exposes users to malware
  - ○ Users with off-Play apps are **9x more likely** to have malware (<u>source</u>, pg 33)
- ● Targeting (device, language, locale) doesn't work on web
- ● App update experience is very poor when compared to what Play can provide them
  - ○ By using sideloading, every single Fortnight update will need to be approved by the user by clicking on "INSTALL" in a dialog provided by PackageManager. After that user, must wait for completion. Since Fortnight is a large app (~3.3GB on iOS), update will likely take a long time to be installed.
  - ○ Meanwhile, Play could provide auto-updates in the background that are nearly invisible to the user
- ● Compliance/ Regulatory/ Family Fraud, etc. (Tia, would appreciate your guidance here as well).

Redacted - Privilege

- ● Argument in favor of Play
  - ○ Adam: Epic has been consistent from day 1 that UX is of paramount importance to them. I believe this is the case because Fortnite as a brand has value well over and above the future value of this current games receipts. (Beyond sequels, imagine licensing revenues for non-interactive media such as film/tv/comics, for example.) A poor UX tarnishes that brand for that user. An advantage that Play has is device

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Purnima Kochikar (Google),
Adam Gutterman (Google),
Tian Lim (Google)

Comment [3]:

synthesizing this, my sense is these are the most principled arguments

1) The install friction is not only a bad experience, but we know from our data that it will drastically limit their reach (this is a way to frame a impaired reach stat without sharing anything sensitive)

2) Future updates will be challenged re: targeting, update experience via web.

3) This approach is most associated with malicious apps. This is incompatible with their brand/demographics

4) The approach will create significant user confusion, since the store will still attract O(billions) of users who will search for Fortnite and run into deadends that aren't clear how to resolve.

5) Launching this way makes it hard to work on top tech issues. e.g. can't easily go back and graft on a piracy solution, collaborate on other experiences/tech issues.

Comment [4]: Paul Bankhead (Google)

Comment [5]: john asserts that device identifiers are available to sideloaded apps because adid is only enforced by policy

Comment [6]: https://developer.android.com/t raining/articles/user-data-ids

Advertising ID is a best practice; tbd if Android device ID can be called

Comment [7]: john says he thinks app can update itself. The AMZN store does this, does it not?

Comment [8]: it cannot, because it has no package installer permission. only system apps can have this permission

Comment [9]: how does chrome do it?

Comment [10]: Any app can become an app installer by calling the Package Manager, but first user must enable unknown sources for that source (Chrome, Amazon App Store, etc).

However, when the app calls the package manager, they don't get a silent install. The user will still need to click on "INSTALL" to confirm.

The only way to install directly without this dialog is to have a system permission (like Play does, or FB installer). Non system apps can't get this permission.

Comment [11]: thanks for the clarification

Comment [12]: The Android build they have provided us so far for testing is ~1.75GB in size.

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targeting, which will prevent blacklisted users from seeing the game in our store, thus limiting poor UX's. That is much harder to do on Fortnite.com. Epic consistently complains that device targeting isn't possible on iOS and were very complimentary of our building this capability.

- Potential counter argument/Epic's view shaped by PC gaming
  - ○ Their target gamers are tech savvy and likely to be PC gamers.
  - ○ PCs are more fragmented than mobile devices, and yet users figure out which games work on their PCs.
  - ○ Game developers provide clear instructions on min spec and recommended spec, which gamers use to decide if they will purchase a game.
  - ○ Driver issues are resolved because gamers have ready access to updates from providers like NVidia → Note this is not true on mobile, but not a problem we can help with in the short run.
  - ○ Most PC games are Premium - box product + DLC. A small number are operate the game as a live service. Most live services games are run from their own platform and are not on Steam. Some of the large developers are choosing to move away from Steam and build their own distribution platforms. Example: EA Origin. Ubisoft now uses a launcher that points to Steam, which could be a step towards their own platform

REVENUE RISK
- Revenue by FOP type in top n revenue markets.
  - ○ Overall - credit cards are the preferred fop in Fortnite's key revenue markets (US, UK, CA, AU), and their usage is growing.
  - ○ The breadth of our FOPs is useful in markets Epic aspires to grow in - JP, KR, HK, TW

**Sources**: trix (populated by this script). Alternatively this Dasnav is available
Contact: fcrovetto@

1) Spend breakdown by FOP by Market (2018 YTD as of 25th June 2018)

SUM of spend_2018 fop

user_country _code	CREDIT_CARD	DCB	PLAY_BALANCE	PAYPAL	OTHERS	WALLET_BALANCE
US	76.3%	4.2%	9.5%	9.9%	0.0%	0.0%
TW	58.1%	41.9%	0.0%		0.0%	
RU	79.7%	19.1%		1.2%	0.0%	
KR	36.6%	35.6%	11.1%		16.8%	
JP	34.2%	39.6%	26.1%	0.1%	0.0%	
GB	65.7%	9.6%	3.1%	21.7%	0.0%	0.0%

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FR	64.1%	17.4%	3.6%	14.9%	0.0%
DE	16.7%	21.0%	21.2%	40.8%	0.3%
CA	72.7%	4.5%	8.8%	14.0%	0.0%
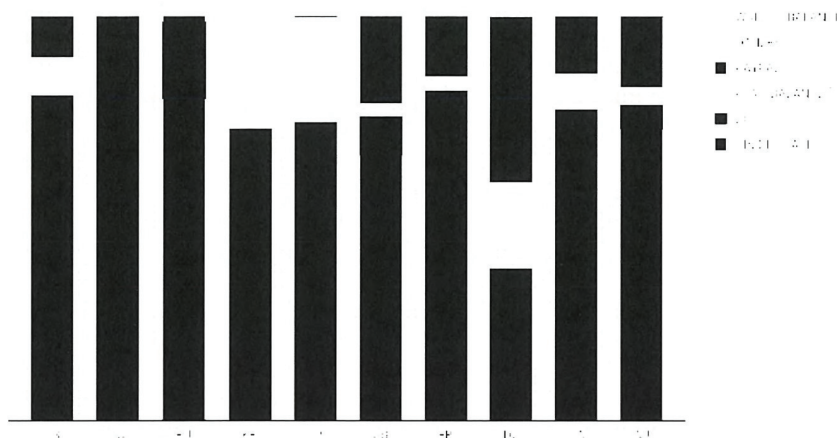
2) Change of Spend breakdown by FOP by Market Y/Y (1 Jan - 25th June 2018 vs 1 Jan - 25th June 2017)

user_country _code	CREDIT_CARD	DCB	OTHERS	PAYPAL	PLAY_BALANCE	WALLET_BALANCE
AU	24.1	-6.3	-18.9	1.4	-0.2	
CA	22.0	-0.8	-21.1	1.0	-1.1	
DE	5.2	-1.7	-5.0	4.7	-3.2	
FR	18.6	-0.4	-18.4	0.8	-0.6	
GB	20.0	-1.0	-19.1	0.4	-0.4	0.0
JP	11.2	-0.6	-9.6	0.0	-1.1	
KR	19.5	-6.5	-14.6		1.6	
RU	26.8	-4.3	-22.1	-0.3		

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TW	18.0	-1.3	-16.6		0.0	
US	23.2	-1.1	-24.6	0.4	2.1	0.0
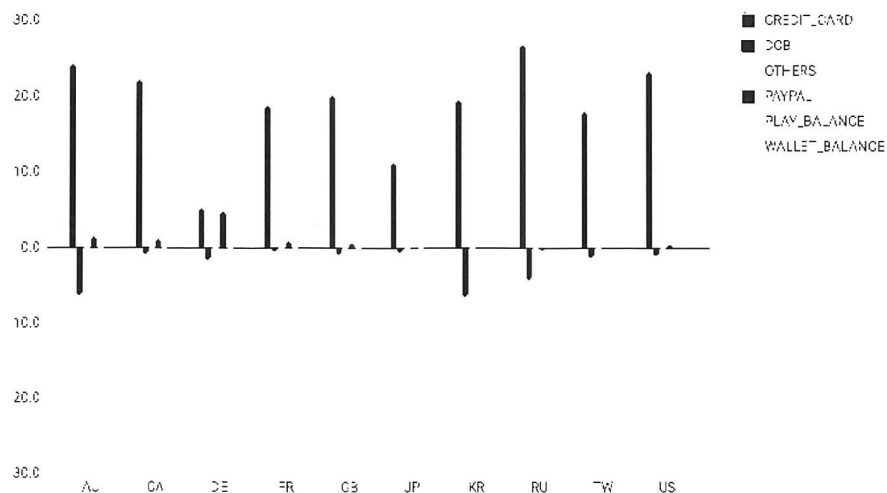
TECH LIMITATIONS?
- Availability of Google ads platforms
  - No issues here. Spending significant amounts on UA across both **iOS ($4.2M QTD)** and **Web ($7.2M QTD)** on Google. More details under Epic overview below.
- Is WebView and Auto-Fill available to sideloaded apps?
  - Yes, WebView and Auto-Fill are available to any Android app, regardless of their install source. Android Autofill is available to any Android app on Oreo+ [confirmed by Dennis Hu and Jenn Chai]
  - Auto-Fill is available only in Android O+, and users can choose between a 1P implementation or 3P services (e.g. LastPass). Most devices keep the 1P provider, and it would be technically possible to alter it to only provide auto-fill for apps installed through Play. Preventing any 3P service from providing auto-fill to sideloaded apps would require an Android Framework change [confirmed by Svet]
  - From Paul G: For WebView, it really does feel like a conversation similar to GMS Core -- that is, the degree to which this sort of functionality should be available at all to apps not distributed through Play (which I recognize is different to other cases we've discussed)

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- Technical support - can they get Fortnite working on Android without us?
  - Adam, speaking for the several SWEs and DevRel Eng who have worked on this: Epic would be much further from shipping (perhaps months) if not for our assistance to date.
  - We are also learning a lot, which will help us be more prepared for future launches and help us improve Android platform itself.

BEYOND STORE
- Marketing/ Promotional support
  - Unclear that this will be attractive, given the Fortnite brand and the $$ they are already spending on UA.
- OEM / Carrier partnerships
  - Adam: They requested help with these partnerships at GDC. We've balked on following up given the stack rank of priorities (the technical challenges have absorbed our bandwidth) and the fact that it's a strong give and Epic hasn't offered much in return.
- goGlobal - they have <1% revenues coming from JP. Can we help? What about other top revenue markets
  - They have an ambition to grow in JP, KR and other APAC markets. However, it is unclear that the game will work in these markets.

Background

Understanding Tim Sweeney
- Motivated by ideals rather than economics. He paid $15M to buy and conserve 7000 acres of forest land in North Carolina.
- Holds PC platform where multiple store/services distribute games as the ideal model for fostering innovation (believes this model will be help Google in the long run by getting regulators off our backs).
- Blames single store model for making UA rather than game design and innovation key to winning on mobile. Sees shift to PC by indie game devs as proof that mobile model is not working.
- Besides advocating for multiple stores, wants sideloading to be default mode in devices. (Is likely to ask for our help to make sideloading safe).
- Watch the talk he gave at the Google Games summit last year to get to know him and his views. It's rather long, so use this summary to check specific sections.

  > **Comment [13]:** Jamie Rosenberg (Google) video provides useful context for your call on Monday. It is rather long, but worth watching

- Contradictions
  - Has launched on iOS and is spending significant $$ on UA on iOS and Web (see GTM section below)
  - Epic licensing charges for the Unreal engine are 5% on mobile, variable on PC/Console for an average of 30%. However, Tim sees 30% rev share by app stores as excessive.

Fortnite overview
- Business model - IAP for "battle pass seasons", skins, and other vanity items.

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- ○ Battle pass seasons cost ~$10 and allow users to unlock rare vanity items by completing quests/ tasks
  - ○ Users can skip (and automatically earn the rewards) for battle pass levels by spending money. For example, a battle pass season has 100 levels, users can spend $20 to advance to level 25, and earn the rewards
  - ○ **Importantly, spending money in Fortnite does not improve a user's chances of winning**
- Platforms - Fornite is available on 5 platforms -- PC, Xbox, PS4, iOS, and Switch
  - ○ Fortnite is available to download, for free, via the **Xbox, Playstation, iOS**, and **Switch** platform stores
  - ○ For **PC** play, the user downloads a client directly from Epic
    - ■ **Adam: This is an important point. Steam is by far the largest store for PC games. Epic has chosen** <u>not</u> **to publish on Steam, which also charges 30%. The combination of the Steam store + the OS itself (Windows largely) is the closest analogue to the Play store / Android OS space.**
  - ○ All gameplay has the potential to be cross-platform (ie, Switch users can play with/ against PC users). Epic does allow for some control however -- meaning, a solo iOS player can chose to only play against other iOS players (helps level the playing field in PC)
- Payment solution - how do they manage billing today on various platforms
  - ○ Purchases on Xbox, Playstation, iOS, and Switch are managed by each platform's purchases
  - ○ Purchases on PC are managed by Epic, primarily with credit card
- Updates - how do they manage updates?
  - ○ For a sideloaded Android app, there's no way to automatically update the game and Epic would need to get user consent to install each new update (<u>screenshots</u>)
  - ○ This could be implemented by requesting the user to enable Fortnite as an unknown source, downloading the new APK in the background, and upon app startup requesting the user to confirm installation (<u>details</u>)
- Entitlement transfer
  - ○ Fortnite's IAP currency is called "Vbucks." Vbucks purchased on one platform can transfer to another other platform (with one exception)
    - ■ Vbucks *purchased* on Playstation cannot transfer to another platform. Vbucks *earned* (by completing quests) on Playstation do transfer
    - ■ Note: there are reports of users not being able to transfer Vbucks to the Switch, tbd on that
  - ○ Items purchased/ earned do universally transfer across platforms
- The "Playstation problem"
  - ○ Users who've linked their Epic account to a PS4 cannot use that account on the Switch or Xbox. Users are highly dissatisfied with this, especially after the Switch launch
  - ○ We believe that Sony is enforcing this as it has the most to lose via x-platform play. Epic has told us that Playstation represents ~80% of Fortnite's revenue (<u>reportedly</u> ~$300M in April)
- iOS revenue by market (from App Annie)
  - ○ 65% US

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- ○ Another almost 15% from UK, AU & CA
- ○ Long tail of western markets make up the rest
- ○ Almost no spend in APAC
  - Adam: Culturally this type of game --- hyper competitive PvP shooter--- is not popular in JP. The art style and sense of humor are also quite Western. I don't imagine a world where this game is successful in JP or even KR without significant investment in culturalization and an overhaul of core mechanics. Success might not even be possible.
  - However, if Epic invests in its cooperative game play, we could help with localization, cuturalization in key Play revenue markets - JP, KR, HK, TW.
  - See this article on Save the World game play mode.
  - ○ https://screenshot.googleplex.com/2ydFPbB8ZKo
- ● Epic stats
  - ○ Reportedly $300M in revenue in April, $100M on iOS in first 90 days
  - ○ Reportedly 125M global players
  - ○ **Game size: Fortnite is 3.3GB on iOS (iPhone X)**, the Android version we are testing is a little less than 2GB, important to note for reach

- ● GTM strategy and spend on Google (from AppDev and LCS teams)
  - ○ **iOS**: Fortnite has **spent $4.8M QTD**, with a predicted EOQ finish of $5.2M on iOS UACs which only optimize toward Installs/CPI. They have very strict user data & age targeting policies which come directly from the C-level. Some include:
    - Cannot target users 12 y/o or younger with marketing.
    - The only event they pass to publishers for app marketing is the First Open Install tracked by AppsFlyer (nothing else is tracked in AppsFlyer).
    - Epic starting to do an analysis on country-level LTVs using internal analytics.
    - They've also removed website pixels (~1 month ago), so all web marketing is currently only optimized on a CPC basis.
    - LCS Israel teams are working on various methods to try and reinstate tracking pixels on their website conversion pages.
    - We are achieving 90-92% share-of-wallet on iOS.
    - Mobile Apps CID (261752119)
  - ○ **Web**: Fortnite has spent **$7.2M QTD** on web campaigns (48% Search, 33% Display, and 19% YouTube). Web spend is being managed by an Israel-based agency called yelloHEAD, and Gili Vaturi from LCS Israel is main POC. Mobile Web CID (223606463).
  - ○ Misc
    - Throughout the sales process, they've been cagey as to what exact budgets (web & app) look like.
    - The reason for the mid-quarter pause was that they used up all of their 'borrowed' budget from another internal web team, and they were being Featured by Apple

EXHIBIT 917-008

Default Category

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AllCustodians:	Bankhead, Paul
	Gutterman, Adam
	Kleidermacher, Dave
	Kochikar, Purnima
	Lim, Tian
	Rosenberg, Jamie
	Samat, Sameer
Title:	
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EXHIBIT 917-009